

VERSIONS WITH MARKINGS TO SHOW CHANGES MADE

2. An adaptive cruise control system for an automotive vehicle as claimed in claim 1, wherein the delay providing section provides a dead time for one of the detected velocities of the vehicle and preceding vehicle which is used to set the target inter-vehicle distance.

3. An adaptive cruise control system for an automotive vehicle as claimed in claim 2, wherein the delay providing section provides a larger dead time for one of the detected velocities of the vehicle and preceding vehicle which is used to set the target inter-vehicle distance as either one of the detected velocities of the vehicle or the preceding vehicle becomes smaller.

4. An adaptive cruise control system for an automotive vehicle as claimed in [either] claim 2[or claim 3], wherein the delay providing section carries out a low-pass filtering for one of the velocities of the vehicle and the preceding vehicle which is used to set the target inter-vehicle distance and whose value is equal to or lower than a predetermined value.

6. An adaptive cruise control system for an automotive vehicle as claimed in claim 5, wherein a time constant [T] of the low-pass filter is set to become larger as one of the detected velocities of the vehicle and the preceding vehicle which is used to set the target inter-vehicle distance becomes lower.

7. An adaptive cruise control system for an automotive vehicle as claimed in [either one of] claim 5[or claim 6], wherein the delay providing section carries out a low-pass filtering for one of the detected velocities of the vehicle and the preceding vehicle which is used to set the target inter-vehicle distance and whose value is equal to or lower than a predetermined value.

8. An adaptive cruise control system for an automotive vehicle as claimed [in any one of the preceding claims 1 through 7] claim 1, wherein the velocity detecting section comprises: a vehicular velocity detecting section that detects the velocity of the vehicle [Vc]; and a preceding vehicle velocity detecting section that detects the velocity of the

preceding vehicle $[V_F]$ on the basis of a relative velocity $[V_r]$ of the vehicle to the preceding vehicle and the velocity of the vehicle.

10. An adaptive cruise control system for an automotive vehicle as claimed in claim 9, wherein the delay providing section provides a fifth control number of times previously detected velocity of the preceding vehicle V_{F5} for the detected velocity of the preceding vehicle V_{FF} used to set the target inter-vehicle distance when [the] a presently detected velocity of the preceding vehicle V_F is equal to or lower than the first predetermined velocity value, provides a fourth control number of times previously detected velocity of the preceding vehicle V_{F4} for the detected velocity of the preceding vehicle V_{FF} used to set the target inter-vehicle distance when the presently detected velocity of the preceding vehicle V_F is higher than the first predetermined velocity value but is equal to or lower than the second predetermined velocity value, provides a third control number of times previously detected velocity of the preceding vehicle V_{F3} for the detected velocity of the preceding vehicle V_{FF} used to set the target inter-vehicle distance when the presently detected velocity of the preceding vehicle V_F is higher than the second predetermined velocity value but is equal to or lower than the third predetermined velocity value, provides a second control number of times previously detected velocity of the preceding vehicle V_{F2} for the detected velocity of the preceding vehicle V_{FF} used to set the target inter-vehicle distance when the presently detected velocity of the preceding vehicle V_F is higher than the third predetermined velocity value but is equal to or lower than the fourth predetermined velocity value, and provides a once control number of time previously detected preceding vehicle V_{F1} for the detected velocity of the preceding vehicle V_{FF} used to set the target inter-vehicle distance when the detected velocity of the preceding vehicle is higher than the fourth predetermined velocity value but is equal to or lower than the fifth predetermined velocity value.

12. An adaptive cruise control system for an automotive vehicle as claimed in claim [7] 6, wherein the time constant T of the low-pass filter is set to give a maximum value T_0 for the detected velocity of the vehicle used to set the target inter-vehicle distance when the detected velocity of the vehicle V_c is zero, is set to becomes smaller as the detected velocity of the vehicle V_c is increased, and is set to give zero when the detected velocity of the vehicle V_c becomes equal to the predetermined value.